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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,004	07/08/2003	William H. Velke		6276

7590

07/25/2005

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CANADA

EXAMINER

BASICHAS, ALFRED

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/614,004

Applicant(s)

VELKE, WILLIAM H.

Examiner

Alfred Basichas

Art Unit

3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 63-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 63-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

The restriction requirement of the previous office actions is hereby withdrawn.

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulating material forming part of the heat exchanger assemblies and the heat storage material being formed as part of the heat exchanger assemblies (claims 28 and 40), and the heat transfer zones being operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism (claims 31 and 43) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

On page 1, line 5 from the bottom the term "power" is misspelled.

On page 4, line 2, "affective" should be spelled "effective".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 63-84 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

- a. Specifically, it has been noted that the range recited in both independent claims 63 and 75 was not described or specifically mention in the specification of the instant application, nor the parent application. The claimed range recitation in question recites **"optimal air operating temperature level of between plus 50 and minus 25 degrees."** The specification of the parent application only recites a ***temperature level of between ambient and minus 40 degrees.***

While the new range is clearly within that previously disclosed, the lack of any specific disclosure for the new range is a strong presumption that applicant did not have possession of the claimed range at the time of filing. Stated in another way, it appears that applicant did not have possession of the knowledge to exclude the two outside ranges that have been omitted in the new range. As applicant is required to disclose the best mode, the limited range now recited in

the claims should have been disclosed in the parent application. Since such is not the case, there is a strong presumption that applicant did not have possession of the knowledge now being claimed.

b. The original disclosure further does not provide support for the range of at least one of said heat transfer zones being related to the exhaust gas vent area of the combustion mechanism (claims 65 and 77), the range of at least one of said heat transfer zones being related to the combustion area of the combustion mechanism (claims 66 and 78), said heat transfer zones being operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism (claims 67 and 79), the fuel being suspended coal dust or a coal dust slurry (claim 73), an insulating material being used to balance any temperature fluctuations occurring in the heat transfer zones (claim 76), and a means for the combustion mechanism to convert an oxidation mixture of fuel and air into high temperature, high velocity combustion products to operate a related energy transfer system (claim 82).

c. In regard to claims 67 and 79, independent claims 63 and 75 from which they depend require that the first heat transfer zone be related to the combustion mechanism. Claims 67 and 79 require the heat transfer zones to operate from a source other than the combustion or exhaust gas area of the combustion mechanism. The original disclosure does not provide support for a heat transfer

zone related to the combustion mechanism but not the combustion or exhaust gas area of the combustion mechanism.

Claim Rejections - 35 USC § 112, second paragraph

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 63-84 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claims 63 and 75, the phrase “and the like” in line 4 of each claim renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by “and the like”), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Further in regard to claims 63 and 75, the phrase “such as” in lines 4 and 6 of each claim renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In regard to claim 82, it is unclear what structure in the specification provides the function of converting an oxidation mixture of fuel and air into high temperature, high velocity combustion products to operate a related energy transfer system.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 63-84 provisionally rejected under the judicially created doctrine of double patenting over claims 27-48 of copending Application No. 10/798,292. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, in which the claims are identical

5. Claims 63-84 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23-43 copending Application No. 10/798,294. Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences would have been obvious to

one of ordinary skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated the claimed ranges and values into the invention disclosed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 63, 65, 68, 69, 72, 74, 75, 77, 80-82, and 84 are rejected under 35 U.S.C. 102(b) as being anticipated by Arenson (3,720,057), which shows all of the claimed limitations. Arenson shows a process and device where a first exchanger assembly (116) extends through a first heat transfer zone related to the combustion mechanism and a second heat exchanger assembly (126) extending through a second heat transfer zone of the combustion mechanism. The fuel supplied through conduit (120) is heated at exchanger (116), which is heated by exhaust gases from a combustion mechanism conveyed through line (114). Air is conveyed through conduit (128) to the second heat exchanger (126). Example 2 (beginning in column 12) shows that natural gas leave heat exchanger (116) at a temperature of 168 degrees F and that

air leaves heat exchanger (126) at a temperature of 40 degrees F. These specific examples fall within applicant's claimed temperature ranges.

In regard to claims 69 and 82, in order for the combustion device (gas turbine engine 112) of Arenson to operate, there is necessarily some means for converting the oxidation mixture of fuel and air into high temperature, high velocity combustion products. Further, as shown in Figure 1, the exhaust products are used to heat a first heat exchanger (32) and an additional heat exchanger (46), which is considered to be a related energy transfer system.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 64, 66, 67, 70, 71, 76, 78, 79, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arenson as applied to the claims above and further in view of Velke (5,888,060). Arenson discloses all the claimed limitations, but does not specifically recite an insulating or heat storage material forming part of the heat exchanger assemblies, one of the heat transfer zones being related to the combustion area of the combustion mechanism, and that the combustion mechanism is a furnace or

process heater. Velke teaches a device for pre-heating fluid flue to decrease its density and thus increase efficiency that is considered analogous prior art. In Velke, a heat storage material forms part of a heat exchanger assembly (see col. 4, lines 18-23) for the purpose of equalizing heat transfer from the heating zone to the heat exchanger during on/off cycles of the appliance. Velke also teaches the use of insulating material (21) in the heat exchanger shown in Figure 4 for the purpose of protecting against external heat loss. Velke also teaches that the heat transfer zone is operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism in the case that access to such heat source locations is difficult (see col. 4, lines 16-18). Velke further teaches the use of a heat transfer zone being related to the combustion area of the combustion mechanism for the purpose of increasing efficiency of the appliance (see the abstract). The fuel employed is natural gas, propane gas, or other conventional fluid hydrocarbon fuel (see col. 3, lines 64-65). In regard to claims 70 and 71, the combustion device disclosed in Velke is a combustion appliance that may be a furnace or heating devices (see col. 4, lines 45-46 and col. 8, lines 45-51). Accordingly, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Arenson: to incorporate the heat storage material and insulating material as taught by Velke to equalize heat transfer from the heating zone to the heat exchanger during on/off cycles of the appliance or to protect against external heat loss; to incorporate the heat transfer zone being operated from a source other than the combustion or exhaust gas vent area of the combustion

mechanism as taught in Velke in the case that such heat source location is difficult to reach (see Velke, col. 4, lines 16-18); and to incorporate heat transfer zone being related to the combustion area of the combustion mechanism as taught by Velke for the purpose of increasing the efficiency of the appliance. Further, it would have been obvious to a person of ordinary skill in the art to substitute a process heater or furnace as taught in Velke for the gas engine of Arenson as these combustion devices are well known to produce a exhaust gas that may be used for heating a fuel feed. This substitution is based on the location and environment intended to receive the gas combustion appliance. For example, if the environment receiving the combustion device is a commercial, roof top then a process or space heater would be selected as the type of combustion device (see Velke, col. 9, lines 31-41).

Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references disclose method and apparatus with many, if not all, of the claimed limitations. Nevertheless, in order to avoid overburdening the applicant with redundant rejections, these references were not applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Basichas whose telephone number is 571 272

4871. The examiner can normally be reached on Monday through Friday during regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 571 272 4877. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center telephone number is 571 272 3700.

July 20, 2005


Alfred Basicas
Primary Examiner